GALLATIN COUNTY

MEMO

TO: **Pre-Disaster Mitigation Plan Stakeholders**

FROM: **Sean O'Callaghan, CFM, Gallatin County Floodplain Administrator**

RE: **Talking Points for April 19, 2007 Pre-Disaster Mitigation Plan Stakeholder Meeting: Statewide flooding risks and hazards**

Flood hazards common to entire state:

- Ice jams (MT has most recorded ice jams in the nation)
- Flooding from rain on snow events or rain on frozen ground events
- Flooding from rapid snowmelt
- Nuisance flooding from backed-up stormwater systems or other malfunctioning drainage systems.

Western Montana Flood Hazards:

- Mountainous areas with alluvial river systems. These systems respond to flood events in unpredictable ways (flashy hydrographs, head cutting, channel migration, etc.)
- Heavy rainfall simultaneous with peak flows from release of mountain snowpack
- Rain on hydrophobic/post burn conditions (also causes mud/debris slides on super-saturated burned soils)

Eastern Montana Flood Hazards:

- Large rivers, manipulated by dams, irrigation control structures, dikes and levees.
- Flood hazards haven't been as much as a concern in Eastern Montana because population distributed over a large area, with little development pressure

Planning Department • 311 West Main, #208 • Bozeman, MT 59715
Phone (406) 582-3130 • FAX (406) 582-3135

- Major ice jam potential on the Yellowstone and Milk rivers. These jams can be significant.

Mitigation Concerns:

- Aging transportation infrastructure (especially on locally important transportation networks) is a concern. Bridges lack adequate freeboard (less than 2 feet above BFE) and culverts are improperly sized or otherwise inadequate.
- Past flood mitigation projects. Levees and dikes that were constructed at some point in the past but have not been adequately maintained. These levees and dikes provide a false sense of security, especially where development has occurred behind these structures.
- Levees negatively impact the existing floodplain by raising flood elevations and increasing flood velocities. New levees should be avoided.
- Large-scale bank armoring projects (whether Detroit rip-rap or other type) treat the symptom, but not the source of the problem. Armoring increases velocities through a reach resulting in increased flood hazards down stream. There may be increased flood heights in the next community downstream, or erosion-related damage (scour, etc.) to public-owned infrastructure downstream.
- During a flood disaster, a lot of temporary band-aids actually become permanent fixes. Unfortunately, mitigation efforts are not commonly implemented during disasters. For example, undersized culverts are replaced with same size culverts. These are likely to fail again during the next event.